

Abstract of the Disclosure

Cardiac laser surgery apparatus including a CO<sub>2</sub> slab laser, and a laser delivery system for delivering laser pulses from the laser to a patient's heart. Also disclosed are mirror adjustment devices for remotely adjusting mirrors sealed inside a laser housing; an RF power supply used to both preionize the laser gas, and to fire the laser by providing RF voltage pulses of longer duration than the preionizing RF voltage pulses; attaching laser optics to an integral fin along extruded laser housing; optical elements receiving a rectangular laser beam and converting it to a square laser beam of the desired dimensions; nonconductive spacers each connecting one electrode to the other in the laser chamber; barbed inserts in the electrodes that connect inductors to the electrodes; a plurality of resilient contact elements extending along a bottom of an electrode and supported on an internal ledge structure of the housing to provide good electrical connection between the electrode and the housing; isolation mounts between the housing and a frame; an air source including a compressor and an air filter, and a tube connected to the laser delivery system to deliver purge air from the source to the hand piece to clear smoke from the inside of the hand piece; and an upwardly extending lip around an output window at the bottom of the laser housing to limit collection of particles on the window.

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